EHS–International, Inc.

13228 NE 20th Street, Suite 100
Bellevue, Washington 989005-2049
Phone 425-455-2959
Toll Free 800-666-2959
Fax 425-646-7247

August 14th, 2014

Mr. Garrett Condel
Sellen Construction
227 Westlake Avenue North
Seattle, WA 98109

Subject: **LEED EQ Cr. 3.2– Indoor Air Testing**
The Park Place Building – Floor 19
1200 Sixth Avenue, Seattle, Washington
EHSI Project 10605-19

Dear Mr. Condel:

At your request, EHS-International, Inc. (EHSI), an environmental health and safety consulting firm, conducted indoor air testing in support of LEED EQ Credit 3.2, (CI) on the 19th Floor of The Park Place Building located at 1200 Sixth Avenue, Seattle, Washington. Sampling was conducted on August 12th, 2014. The results, conclusions and recommendations are included in the attached report.

EHSI is pleased to provide our professional industrial hygiene services. If you have any questions concerning this report or if EHSI can provide further services to you, please call me at (425) 455-2959.

Sincerely,

EHS-International, Inc.

Clinton Holzhauer, LEED AP, CMC
Manager, Indoor Air Quality Services

Floor 19
The Park Place Building
LEED EQ Credit 3.2—(CI) Air Testing Results

The Park Place Building
1200 Sixth Avenue, Seattle, Washington

Prepared for:

Mr. Garrett Condel
Sellen Construction
227 Westlake Avenue North
Seattle, WA 98109

August 14, 2014
EHSI Project 10605-19

EHS–International, Inc.

13228 NE 20th Street, Ste. 100
Bellevue, Washington 98005
Telephone: (425) 455–2959 ▪ Toll Free: (800) 666–2959 ▪ Fax: (425) 646-7247

EHS-International, Inc.

Indoor Air Quality Consulting & Building Investigations

13228 NE 20th Street, Ste. 100 Bellevue, WA
(425) 455-2959 • Fax (425) 646-7247
www.ehsintl.com

Results of Indoor Air Quality Testing in Park Place Building

Floor 19

1200 Sixth Avenue, Seattle, Washington
For LEED IEQ Credit c3.2

EXECUTIVE SUMMARY

EHS-International, Inc. (EHSI), an environmental health and safety consulting firm, conducted indoor air quality (IAQ) testing on the newly renovated Nineteenth (19th) floor of the Park Place Building, located at 1200 Sixth Avenue, Seattle, Washington, on August 12th, 2014. The purpose of the testing was to determine whether the space is in compliance with the indoor environmental quality (IEQ) standard IEQ Credit c3.2 established by the United States Green Building Council (USGBC) for LEED® for Commercial Interiors (CI) 2009.

EHSI accomplished LEED® IAQ sampling in one (1) indoor location on the 19th floor. Sampling included using hand-held instruments to directly read and data-log concentrations of carbon monoxide (CO) and airborne particulates less than 10 microns in diameter (PM10) and collecting samples for laboratory analysis of airborne concentrations of total volatile organic compounds (TVOCs), formaldehyde and 4-phenylcyclohexene (4-PCH).

Results from the sampling indicate that concentrations of CO, PM10, TVOCs, formaldehyde and 4-PCH were all less than the maximum allowable values established by LEED®.

These results indicate that the newly renovated nineteenth (19th) floor in the Park Place Building has passed the Indoor Environmental Quality Tests for LEED IEQ Credit c3.2.

BUILDING CONDITIONS DURING TESTING

- The renovation of the 19th floor was completed at the time of testing.
- The 19th floor has a footprint of less than 13,000 square feet and one air handling unit provides conditioned air to the space.
- The samples were collected between 3 and 6 feet above floor level and sample collection took place over a four hour period.
- All samples were collected between 8:00 am and 12:00 pm.

A letter provided by the MacDonald-Miller Facility Solutions HVAC system specialist stating that the heating, ventilating and air conditioning (HVAC) system "started at the normal daily start time and operated at the minimum outside air flow rate for the occupied mode throughout the test" is presented in an appendix to this report.

TESTING SCOPE & METHODS USED

Based on the LEED® requirements one (1) location on the 19th floor was chosen for testing. The LEED® requirements are based on square footage and the number of ventilation systems. Testing was conducted in the following location:

- Floor 19 – Open office cubical area– South side of floor towards east side of building

A floor plan denoting the sampling location is included in Appendix A.

EHSI tested for carbon monoxide (CO), airborne particulates less than ten microns in diameter (PM10), total volatile organic compounds (TVOCs), formaldehyde and 4-PCH.

Real time measurements were made of carbon monoxide (CO) and fine airborne particulates less than 10 microns in diameter (PM10). The measurements were obtained using a calibrated TSI Q-Trak indoor air monitor for CO and a calibrated TSI Dust-Trak for PM10. Data was logged every minute over a four-hour period. Additional information for CO is provided in Appendix B and additional information for PM10 is located in Appendix C. Calibration data for the direct read instruments used is included in Appendix D.

4-PCH was sampled using an SKC charcoal tube (226-001) and a low flow personnel sampling pump calibrated to sample at a rate of 0.20 liters per minute. The collected sample was transferred to Galson Laboratories (Galson) in East Syracuse, New York, under chain-of-custody control and analyzed in accordance with modified NIOSH 1501 using gas chromatography with a photoionization detector (GC/PID). All analytical tests were conducted on a "next day" turn-around-time basis.

TVOCs were sampled using an evacuated mini-SUMMA canister with a 4-hour regulator. The sample was submitted, under chain-of-custody control, for analysis to Galson. Samples were analyzed in accordance with modified OSHA PV2120/modified EPA TO-15 using GC/MS.

Formaldehyde was sampled using a N580 Assay passive monitoring badge with both face plates removed. The monitoring badge was submitted, under chain-of-custody control, for analysis to Galson. Samples were analyzed in accordance with modified OSHA 1007 using High Performance Liquid Chromatography (HPLC) with Ultraviolet light (UV).

The Galson laboratory analytical test results report for TVOCs, 4-PCH and formaldehyde is included in Appendix E. EHSI Field Data sheets are presented in Appendix F. The letter from the MacDonald-Miller Facility Solutions HVAC System Specialist is included in Appendix G.

Sampling was conducted by Mr. Rory Peterson, EHSI Industrial Hygiene Technician, on August 12th, 2014. All samples were collected at a height of 3 to 6 feet from the floor. Laboratory results were expedited.

TEST FINDINGS

The results from testing, presented in micrograms per cubic meter (ug/m^3), parts per billion (ppb) or parts per million (ppm) are listed in Table 1.

Table 1
TVOCs, PM10, CO, Formaldehyde and 4-PCH
19th Floor
August 12th, 2014

Sampling Location	TVOCs (ug/m^3)	PM10 Particulates (ug/m^3)	CO (ppm)	Formaldehyde (ppb)	4-PCH (ug/m^3)
Date & Time	August 12th 8:00 – 12:01	August 12th 8:01 – 12:03	August 12th 8:01 – 12:03	August 12th 8:02 – 12:03	August 12th 8:02 – 12:03
Floor 19 Open Office Cubical Area South side of Floor	230	7	0.3	<20	<4
LEED Maximum Allowable	**500**	**50**	**9**	**27**	**6.5**

< = less than

CONCLUSIONS

Results from air testing on the newly renovated 19th Floor of the Park Place Building, located at 1200 Sixth Avenue, Seattle, Washington, indicate that the space had concentrations of carbon monoxide, formaldehyde, TVOCs, PM10 and 4-PCH that were below the maximum allowable concentrations established by LEED®.

These results indicate that the 19th Floor has **passed** the Indoor Environmental Quality Tests for LEED® IEQ Credit 3.2 CI.

LIMITATIONS AND STANDARD OF CARE

This testing was conducted by EHS-International, Inc. in accordance with the scope of work defined by EHSI proposal 13-018 and the USGBC LEED Reference Guide, 2009 Edition. EHSI followed currently accepted industrial hygiene practices, including professional opinions based on observations and laboratory data obtained. Other than this, no warranty is implied or intended.

APPENDIX A

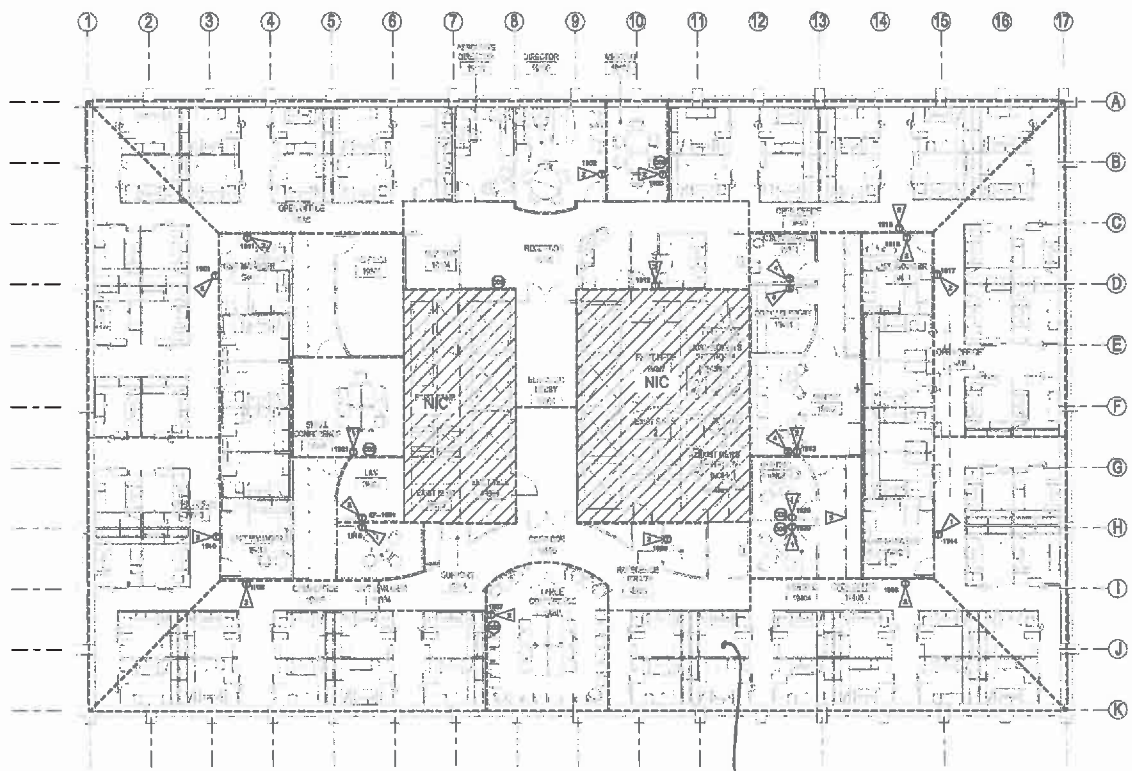
FLOOR PLAN WITH SAMPLING LOCATION

SHEET NOTES:

1. INSTALL TEMPERATURE SENSORS 48" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.
2. INSTALL CARBON DIOXIDE (CO2) SENSORS 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.

FLAG NOTES:

1. TEMPERATURE SENSOR FOR NEW TERMINAL UNIT.
2. NEW TEMPERATURE SENSOR FOR EXISTING TERMINAL UNIT.
3. PROVIDE EXHAUST FAN WITH DISCHARGE TO RETURN AIR PLENUM FOR COOLING TO LAN 19303.
4. CONNECT TO RELAY IN OCCUPANCY SENSOR PROVIDED BY ELECTRICAL CONTRACTOR FOR CONTROL OF EXHAUST FAN.
5. SINGLE ZONE WITH MULTIPLE SENSORS. CONTROL TO WORSE CASE SCENARIO.



08/12/2012

HVAC ZONE PLAN - 19TH FLOOR
SCALE: 1/8" = 1'-0"

1

EPA - REGION 10

1200 6th Ave.
Levels 10-16 & 18-21
Seattle, WA 98101

Gensler
1200 6th Avenue Suite 500
Seattle, WA 98101
Telephone 206.654.2100
Facsimile 206.654.2121

HARGIS

Date & Issue Description		By	Check
10/28/2011	50% CD / Pricing	AH	RE
02/03/2012	95% CD / Pricing	AH	RE
04/06/2012	100% CD / Pricing	AH	RE
01/28/2013	95% Combined Bid	AH	RE

Seal/Signature

Project Name
EPA - REGION 10

Project Number
32.8189.000

Description
HVAC ZONE PLAN - 19TH FLOOR

Scale
1/8" = 1'-0"

M03.19A

APPENDIX B

CARBON MONOXIDE (CO)

The Park Place Building
Floor 19
August 12, 2014

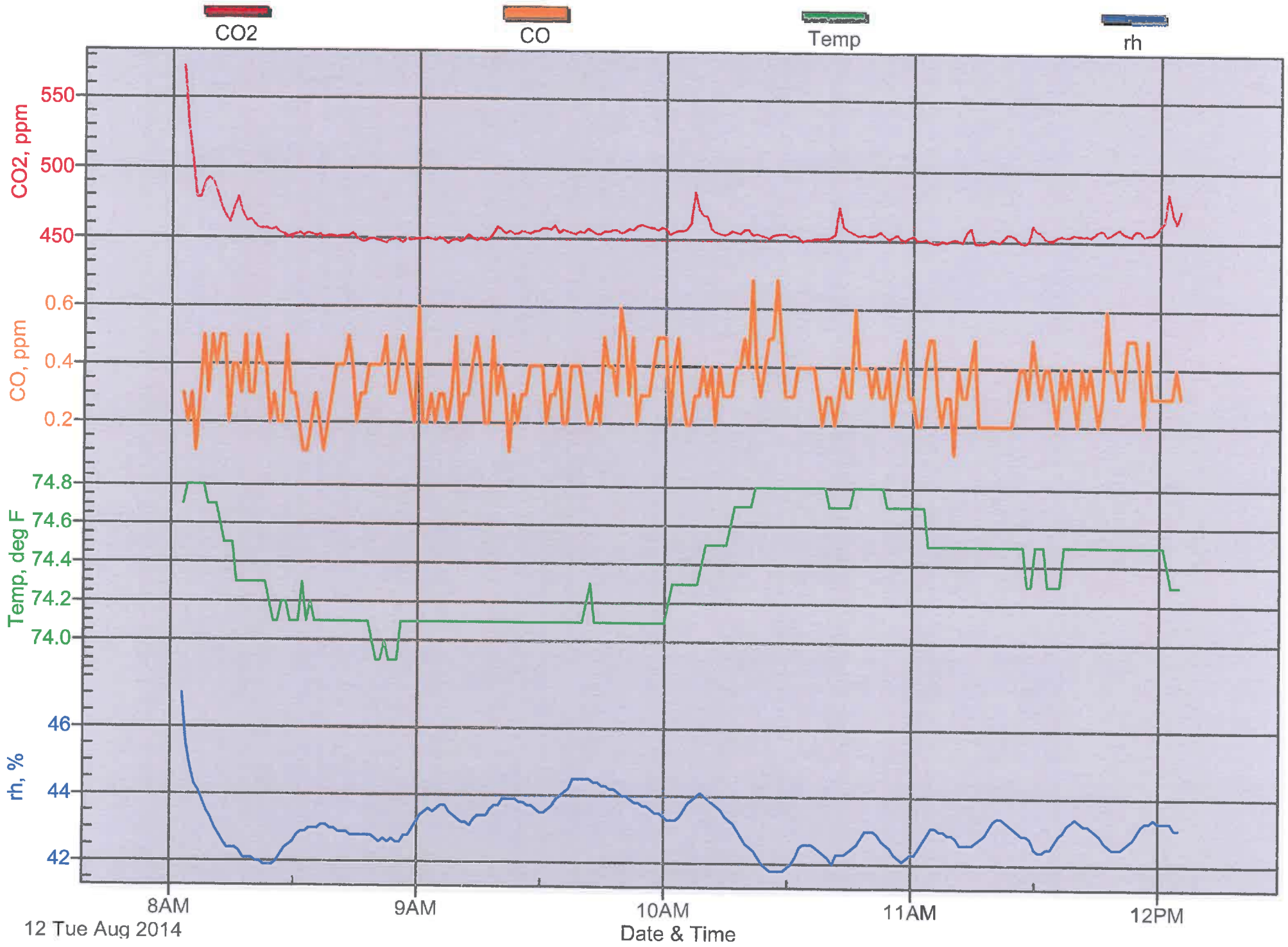
CO

Instrument		Data Properties	
Model	Q-Trak Plus	Start Date	08/12/2014
Meter S/N	8554-08061026	Start Time	08:01:54
		Stop Date	08/12/2014
		Stop Time	12:04:54
-		Total Time	0:04:03:00
		Logging Interval	60 seconds

Statistics				
	CO2	CO	Temp	rh
Avg	457 ppm	0.3 ppm	74.4 deg F	43.1 %
Max	572 ppm	0.7 ppm	74.8 deg F	47.0 %
Max Date	08/12/2014	08/12/2014	08/12/2014	08/12/2014
Max Time	08:02:54	10:20:54	08:03:54	08:02:54
Min	447 ppm	0.1 ppm	73.9 deg F	41.8 %
Min Date	08/12/2014	08/12/2014	08/12/2014	08/12/2014
Min Time	08:51:54	08:05:54	08:49:54	10:25:54
TWA (8 hr)	231	0.2		
TWA Start Date	08/12/2014	08/12/2014		
TWA Start Time	08:01:54	08:01:54		
TWA End Time	12:04:54	12:04:54		

Floor 19 CO

08/12/2014



APPENDIX C

PM10 – AIRBORNE DUST

The Park Place Building
Floor 19
August 12, 2014

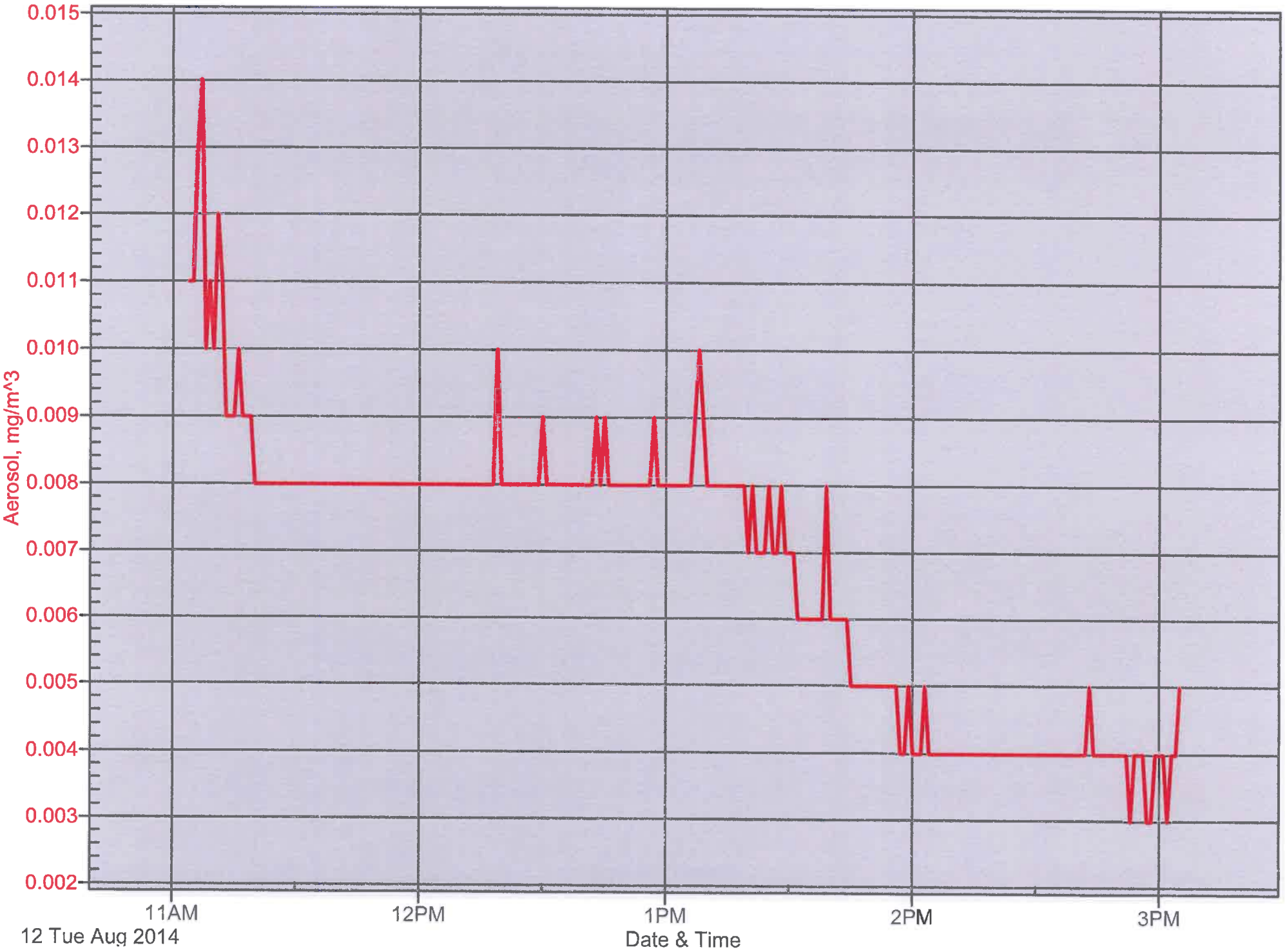
PM10

Instrument		Data Properties	
Model	Dust Trak	Start Date	08/12/2014
Meter S/N	85200138	Start Time	11:03:00
		Stop Date	08/12/2014
		Stop Time	15:05:00
		Total Time	0:04:02:00
		Logging Interval	60 seconds

Statistics	
	Aerosol
Avg	0.007 mg/m^3
Max	0.014 mg/m^3
Max Date	08/12/2014
Max Time	11:07:00
Min	0.003 mg/m^3
Min Date	08/12/2014
Min Time	14:53:00
TWA (8 hr)	0.003
TWA Start Date	08/12/2014
TWA Start Time	11:03:00
TWA End Time	15:05:00

Floor 19 PM10

08/12/2014



APPENDIX D

INSTRUMENT CALIBRATION DATA

CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

AM021

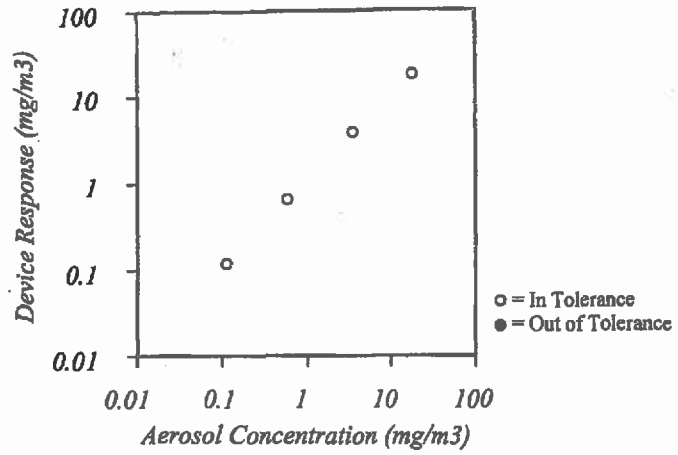
Environment Condition		
Temperature	74.8 (23.8)	°F (°C)
Relative Humidity	40	%RH
Barometric Pressure	29.08 (984.8)	inHg (hPa)

Model	8520
Serial Number	85200138

☒ As Left ☐ As Found

☒ In Tolerance ☐ Out of Tolerance

Concentration Linearity Plot



System ID: DTII01-02

Zero Stability Results

Average:	Minimum:	Maximum:	Time:
0.000 :mg/m³	0.000 :mg/m³	0.001 :mg/m³	16:00 :hrs.

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass of standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 1.2:1

Measurement Variable	System ID	Last Cal.	Cal. Due
Barometric Pressure	E003733	03-27-14	03-27-15
Humidity	E002873	11-05-13	11-05-14
DC Voltage	E003315	01-03-14	01-03-15
Microbalance	M001324	01-04-13	01-04-15
Flowmeter	E002471	04-30-14	04-30-15

Measurement Variable	System ID	Last Cal.	Cal. Due
Temperature	E002873	11-05-13	11-05-14
DC Voltage	E003314	01-03-14	01-03-15
Photometer	E003319	02-11-14	08-11-14
Pressure	E003511	11-04-13	11-04-14

Calibrated

☒ Final Function Check

May 29, 2014
Date

TSI P/N 2300157

EHS–International, Inc.

Q-TRAK Plus CALIBRATION LOG

TSI Model 8554
Serial Number 8554-08061026
Bought new by EHSI 8/2006

Date	Calibration By	CO2	CO	Temp	RH	
01/20/12	HOLZHAUER	X	X	—	—	
6/25/12	HOLZHAUER	X	X	—	—	
12/03/12	HOLZHAUER	X	X	—	—	
2/4/13	HOLZHAUER	X	X	—	—	
3/4/13	HOLZHAUER	X	X	—	—	
6/1/13	HOLZHAUER	X	X	—	—	
7/1/13	HOLZHAUER	X	X	—	—	
7/8/13	HOLZHAUER	X	X	—	—	
1/2/14	HOLZHAUER	X 102%	X 91%	—	—	
1/21/14	HOLZHAUER	X	X	—	—	
2/4/14	HOLZHAUER	X	X	—	—	
2/10/14	HOLZHAUER	X	X	—	—	
2/20/14	HOLZHAUER	X 101%	X 91%	—	—	bump test
4/1/14	HOLZHAUER	X	X	—	—	
4/29/14	HOLZHAUER	X 104%	X 97%	—	—	
7/18/14	HOLZHAUER	X	X			
8/11/14	HOLZHAUER	X	X	—	—	

CO/CO2 Span Gas Lot#06-3220, filled 12/21/06
CO/CO2 Zero Gas Lot#06-3150, filled 12/22/06

APPENDIX E

PATI LABORATORY ANALYTICAL RESULTS
TVOCS AND 4-PCH

Mr. Clinton Holzhauer
EHS-International, Inc.
13228 NE 20th Street
Suite 100
Bellevue, WA 98005

August 14, 2014

DOH ELAP #11626
AIHA-LAP #100324

Account# 13697

Login# L325608

Dear Mr. Holzhauer:

Enclosed are the analytical results for the samples received by our laboratory on August 13, 2014. All test results meet the quality control requirements of AIHA-LAP and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Pamela Weaver at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G Unangst

Mary G. Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES
6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : EHS-International, Inc.
Site : The Park Place Bldg
Project No. : 10605-19

Date Sampled : 12-AUG-14
Date Received : 13-AUG-14
Date Analyzed : 13-AUG-14
Report ID : 845176

Account No.: 13697
Login No. : L325608

Formaldehyde

Sample ID	Lab ID	Time minutes	Total ug	Conc ug/m3	ppb
10605-19F	L325608-2	241	<0.6	<20	<20

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.6 ug
Analytical Method : mod. OSHA 1007; HPLC/UV
OSHA PEL : 0.75 ppm (TWA)
Collection Media : Assay 580

Submitted by: eaw/crd
Approved by : nkp
Date : 14-AUG-14 NYS DOH # : 11626
QC by: Tony D'Amico

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : EHS-International, Inc.
Site : The Park Place Bldg
Project No. : 10605-19

Date Sampled : 12-AUG-14
Date Received : 13-AUG-14
Date Analyzed : 13-AUG-14
Report ID : 845216

Account No.: 13697
Login No. : L325608

Galson ID: L325608-1
Client ID: 10605-19T

	LOQ ppbv	LOQ ug/m3	ppbv	ug/m3
Propylene	5.0	8.6	<5.0	<8.6
Freon-12	5.0	25	<5.0	<25
Chloromethane	5.0	10	<5.0	<10
Freon-114	5.0	35	<5.0	<35
Vinyl Chloride	5.0	13	<5.0	<13
1,3-Butadiene	5.0	11	<5.0	<11
Bromomethane	5.0	19	<5.0	<19
Chloroethane	5.0	13	<5.0	<13
Vinyl Bromide	5.0	22	<5.0	<22
Freon-11	5.0	28	<5.0	<28
Isopropyl Alcohol	25	61	<25	<61
Acetone	25	59	<25	<59
1,1-Dichloroethene	5.0	20	<5.0	<20
Methylene Chloride	5.0	17	<5.0	<17
Freon-113	5.0	38	<5.0	<38
Allyl Chloride	5.0	16	<5.0	<16
Carbon Disulfide	10	31	<10	<31
Trans-1,2-Dichloroethene	5.0	20	<5.0	<20
Methyl Tert-Butyl Ether	5.0	18	<5.0	<18
1,1-Dichloroethane	5.0	20	<5.0	<20
Vinyl Acetate	5.0	18	<5.0	<18

Analytical Method : mod. OSHA PV2120/mod. EPA
Collection Media : Mini Can

Submitted by: kaw
Approved by : tlh
Date : 14-AUG-14 NYS DOH # : 11626
QC by : Tony D'Amico

< -Less Than
> -Greater Than
NA -Not Applicable
NS -Not Specified

MG -Milligrams
UG -Micrograms
ND -Not Detected
KG -Kilograms

M3 -Cubic Meters
L -Liters
ppbv-Parts per Billion Volume
LOQ -Limit of Quantitation

LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : EHS-International, Inc.
Site : The Park Place Bldg
Project No. : 10605-19

Date Sampled : 12-AUG-14
Date Received : 13-AUG-14
Date Analyzed : 13-AUG-14
Report ID : 845216

Account No.: 13697
Login No. : L325608

Galson ID: L325608-1
Client ID: 10605-19T

	LOQ ppbv	LOQ ug/m3	ppbv	ug/m3
Methyl Ethyl Ketone	5.0	15	<5.0	<15
cis-1,2-Dichloroethylene	5.0	20	<5.0	<20
Hexane	5.0	18	<5.0	<18
Ethyl Acetate	5.0	18	<5.0	<18
Chloroform	5.0	24	<5.0	<24
Tetrahydrofuran	5.0	15	<5.0	<15
1,2-Dichloroethane	5.0	20	<5.0	<20
1,1,1-Trichloroethane	5.0	27	<5.0	<27
Cyclohexane	5.0	17	<5.0	<17
Carbon Tetrachloride	5.0	31	<5.0	<31
Benzene	5.0	16	<5.0	<16
1,4-Dioxane	20	72	<20	<72
2,2,4-Trimethylpentane	5.0	23	<5.0	<23
Heptane	5.0	20	<5.0	<20
1,2-Dichloropropane	5.0	23	<5.0	<23
Trichloroethylene	5.0	27	<5.0	<27
Bromodichloromethane	5.0	34	<5.0	<34
cis-1,3-Dichloropropene	5.0	23	<5.0	<23
trans-1,3-Dichloropropene	5.0	23	<5.0	<23
1,1,2-Trichloroethane	5.0	27	<5.0	<27
Toluene	5.0	19	<5.0	<19

Analytical Method : mod. OSHA PV2120/mod. EPA
Collection Media : Mini Can

Submitted by: kaw
Approved by : tlh
Date : 14-AUG-14 NYS DOH # : 11626
QC by : Tony D'Amico

< -Less Than
> -Greater Than
NA -Not Applicable
NS -Not Specified

MG -Milligrams
UG -Micrograms
ND -Not Detected
KG -Kilograms

M3 -Cubic Meters
L -Liters
ppbv-Parts per Billion Volume
LOQ -Limit of Quantitation

LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : EHS-International, Inc.
Site : The Park Place Bldg
Project No. : 10605-19

Date Sampled : 12-AUG-14
Date Received : 13-AUG-14
Date Analyzed : 13-AUG-14
Report ID : 845216

Account No.: 13697
Login No. : L325608

Galson ID: L325608-1
Client ID: 10605-19T

	LOQ ppbv	LOQ ug/m3	ppbv	ug/m3
Dibromochloromethane	5.0	43	<5.0	<43
Methyl Isobutyl Ketone	20	82	<20	<82
Methyl Butyl Ketone	20	82	<20	<82
1,2-Dibromoethane	5.0	38	<5.0	<38
Tetrachloroethylene	5.0	34	<5.0	<34
Chlorobenzene	5.0	23	<5.0	<23
Ethylbenzene	5.0	22	<5.0	<22
Bromoform	5.0	52	<5.0	<52
m & p-xylene	10	43	<10	<43
Styrene	5.0	21	<5.0	<21
o-Xylene	5.0	22	<5.0	<22
1,1,2,2-Tetrachloroethane	5.0	34	<5.0	<34
4-Ethyltoluene	5.0	25	<5.0	<25
1,3,5-Trimethylbenzene	5.0	25	<5.0	<25
1,2,4-Trimethylbenzene	5.0	25	<5.0	<25
1,3-Dichlorobenzene	5.0	30	<5.0	<30
Benzyl Chloride	5.0	29	<5.0	<29
1,4-Dichlorobenzene	5.0	30	<5.0	<30
1,2-Dichlorobenzene	5.0	30	<5.0	<30
Total Volatile Organics				ND

Analytical Method : mod. OSHA PV2120/mod. EPA
Collection Media : Mini Can

Submitted by: kaw
Approved by : tlh
Date : 14-AUG-14 NYS DOH # : 11626
QC by : Tony D'Amico

< -Less Than
> -Greater Than
NA -Not Applicable
NS -Not Specified

MG -Milligrams
UG -Micrograms
ND -Not Detected
KG -Kilograms

M3 -Cubic Meters
L -Liters
ppbv-Parts per Billion Volume
LOQ -Limit of Quantitation

LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : EHS-International, Inc.
Site : The Park Place Bldg
Project No. : 10605-19

Date Sampled : 12-AUG-14
Date Received : 13-AUG-14
Date Analyzed : 13-AUG-14
Report ID : 845218

Account No.: 13697
Login No. : L325608

Client ID : 10605-19T **Lab ID : L325608-1**

Tentatively Identified Compounds	CAS Number	Retention Time	Estimated Concentration ppbv	ug/m3
Unknown Compound		21.97	7.5	69
Total VOC's				69

Analytical Method : mod. OSHA PV2120/mod. EPA
Collection Media : Mini Can

Submitted by: kaw
Approved by : tlh
Date : 14-AUG-14 NYS DOH # : 11626
QC by: Tony D'Amico

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters LOQ -Limit of Quantitation
NA -Not Applicable ND -Not Detected NS -Not Specified ppbv-Parts per Billion Volume

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : EHS-International, Inc.
Site : The Park Place Bldg
Project No. : 10605-19

Date Sampled : 12-AUG-14
Date Received : 13-AUG-14
Date Analyzed : 13-AUG-14
Report ID : 845218

Account No.: 13697
Login No. : L325608

LEED TESTING RESULTS

Sample ID	Lab ID	TVOCs ug/m3
10605-19T	L325608-1	230

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : EHS-International, Inc.
Site : The Park Place Bldg
Project No. : 10605-19

Date Sampled : 12-AUG-14
Date Received : 13-AUG-14
Date Analyzed : 13-AUG-14
Report ID : 845213

Account No.: 13697
Login No. : L325608

4-Phenylcyclohexene

Sample ID	Lab ID	Air Vol liter	Front ug	Back ug	Total ug	Conc ug/m3	ppb
10605-19P	L325608-3	48.2	<0.2	<0.2	<0.2	<4	<0.7

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.2 ug
Analytical Method : mod. NIOSH 1501; GC/PID
OSHA PEL : NA
Collection Media : 226-01

Submitted by: sab
Approved by : nkp
Date : 14-AUG-14 NYS DOH # : 11626
QC by: Tony D'Amico

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

GALSON LABORATORIES
6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : The Park Place Bldg
Project No. : 10605-19

Date Sampled : 12-AUG-14 Account No.: 13697
Date Received: 13-AUG-14 Login No. : L325608
Date Analyzed: 13-AUG-14

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L325608 (Report ID: 845176):
SOPs: LC-SOP-4(14)
Total ug corrected for a desorption efficiency of 94%.
Formaldehyde results have been corrected for the average background found on the media: 0.1022 ug for lot #9A13.

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
Formaldehyde	+/-6%	97%

L325608 (Report ID: 845216):
SOPs: in-vocs(26)
The laboratory control sample duplicate (LCSD) was outside the control limits of 70.0 to 130% at 57.2% recovery for 1,4-Dioxane. Reported results may be biased low.
The laboratory control sample duplicate (LCSD) was outside the control limits of 70.0 to 130% at 59.2% recovery for Isopropyl Alcohol. Reported results may be biased low.

L325608-1 (Report ID: 845216):
Sample canister was received at (or near) ambient pressure, indicating that the sampling event may have ended prematurely. Reported results may not be representative of the intended sampling duration.

L325608 (Report ID: 845216):
Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
1,1,2,2-Tetrachloroethane	+/-18.9%	80.4%
1,1,2-Trichloroethane	+/-16.6%	90.3%
1,1-Dichloroethane	+/-16.8%	93.8%
1,1-Dichloroethene	+/-17.8%	94.6%
1,2,4-Trimethylbenzene	+/-22.4%	89.4%
1,2-Dibromoethane	+/-18.3%	89.1%
1,2-Dichlorobenzene	+/-22.2%	83.6%
1,2-Dichloroethane	+/-19.9%	94.2%

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client Name : EHS-International, Inc.
Site : The Park Place Bldg
Project No. : 10605-19

Date Sampled : 12-AUG-14
Date Received: 13-AUG-14
Date Analyzed: 13-AUG-14

Account No.: 13697
Login No. : L325608

1,2-Dichloropropane	+/-18.3%	90.9%
1,3,5-Trimethylbenzene	+/-20.8%	88.9%
1,3-Dichlorobenzene	+/-20.2%	86.4%
1,4-Dichlorobenzene	+/-20.8%	86.7%
2,2,4-Trimethylpentane	+/-17.4%	95%
4-Ethyltoluene	+/-20.2%	91.5%
Allyl Chloride	+/-18.7%	93.5%
Acetone	+/-22.2%	91.6%
Bromodichloromethane	+/-18.7%	95.8%
Bromoform	+/-18.6%	92.6%
1,3-Butadiene	+/-21%	95.5%
Benzene	+/-18.1%	93.3%
Benzyl Chloride	+/-26.6%	91.1%
Carbon Disulfide	+/-19.2%	100%
Carbon Tetrachloride	+/-20.2%	94.9%
cis-1,2-Dichloroethylene	+/-19.3%	84.9%
cis-1,3-Dichloropropene	+/-22.2%	101%
Chlorobenzene	+/-17.7%	88.2%
Dibromochloromethane	+/-17.8%	91.9%
Chloroform	+/-17.1%	93.1%
Cyclohexane	+/-18.9%	93.6%
1,4-Dioxane	+/-28.2%	87.5%
Ethyl Acetate	+/-20.8%	93%
Ethylbenzene	+/-18.4%	87.1%
Chloroethane	+/-21.6%	97.5%
Freon-11	+/-22.8%	95.4%
Freon-113	+/-17.1%	95%
Freon-114	+/-26%	83.2%
Freon-12	+/-26.4%	99.5%
Heptane	+/-18.6%	94.1%
Isopropyl Alcohol	+/-23.4%	92.2%
1,1,1-Trichloroethane	+/-18.4%	91.1%
Bromomethane	+/-18.9%	89.1%
Chloromethane	+/-21.8%	102%
Methylene Chloride	+/-15.4%	90%
Methyl Ethyl Ketone	+/-21.4%	95.7%
Methyl Isobutyl Ketone	+/-21.6%	92.6%
Methyl Butyl Ketone	+/-22.8%	93.7%
m & p-xylene	+/-18%	87.8%
Methyl Tert-Butyl Ether	+/-19.6%	94.1%
Hexane	+/-17.8%	93.7%
o-Xylene	+/-17.6%	87.1%
Propylene	+/-26%	104%
Styrene	+/-21.4%	91.7%
Trichloroethylene	+/-18.3%	94.4%
Tetrachloroethylene	+/-18.7%	90%
Tetrahydrofuran	+/-22.2%	94.4%
Toluene	+/-19.9%	90.1%
Trans-1,2-Dichloroethene	+/-19.2%	106%
trans-1,3-Dichloropropene	+/-21%	96.8%
Vinyl Acetate	+/-23.4%	89.6%
Vinyl Bromide	+/-18.9%	97.1%
Vinyl Chloride	+/-19.3%	96%

L325608 (Report ID: 845218):
Tentatively Identified Compounds (TICS) are estimated values. TICS are

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : The Park Place Bldg
Project No. : 10605-19

Date Sampled : 12-AUG-14 Account No.: 13697
Date Received: 13-AUG-14 Login No. : L325608
Date Analyzed: 13-AUG-14

L325608 (Report ID: 845218):
calculated using an average response factor of 1 for all compounds.
SOPs: in-vocs(26)

L325608 (Report ID: 845213):
Total ug corrected for a desorption efficiency of 97%.
SOPs: GC-SOP-12(7), GC-SOP-16(12), GC-SOP-8(13)

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2).
The estimated uncertainty applies to the media, technology, and SOP referenced in this report
and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
4-Phenylcyclohexene	+/-18.7%	95.3%

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million

GALSON LABORATORIES

876251326126
Date:08/13/14
Shipper:FEDEX
Initials:DC/cms
Prep:PSY313087

☐ New Client?

Report To*: Clinton Holzhauer
EHS- International, Inc.
Client Account No.*: 13228 NE 20th St. Suite 100
Bellevue, WA 98005
Phone No.*: (425) 455-2959
Cell No.: (425) 766-5697
Email Results To: Clinton H.
Email Address: clintonh@ehsintl.com

Invoice To*: Shelby McClure
EHS-International, Inc.
R23
13228 NE 20th St, Suite 100
Bellevue, WA 98005
Phone No.: (425) 455-2959
Email: shelbyn@ehsintl.com
Purchase Order No.: 10605-19
Credit Card: ☐ Credit Card on File ☐ Call for Credit Card Info

☒ Samples submitted using the FreePumpLoan™ Program.
☒ Samples submitted using the FreeSamplingBadges™ Program.

Turnaround Time (TAT)	(Surcharge)
☐ Standard	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☒ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same Day	200%

Site Name: The Park Place Bldg Project: 10605-19 Sampled By: R. Peterson

Comments: 19th Floor
Both Covers Removed on Formaldehyde Badge
All 3 Samples are in Green Plastic Bag.

List description of industry or process/interferences present in sampling area:

State samples were collected in (ex. NY): WA

Please indicate which OEL this data will be used for:
☐ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA
☐ MSHA ☒ Other (specify): LEED

Sample Identification* (Maximum of 20 characters, ID's longer than 20 characters will be abbreviated.)	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Volume, Sample Time, or Sample Area*	Sample Units*: L, ml, min., in2, cm2, ft2	Analysis Requested*	Method Reference^	Hexavalent Chromium Process (ex. welding, plating, painting, etc.)*
Example	01/01/11	2pc UW PVC	960	L	Hexavalent Chromium (Cr6)	mod. OSHA ID-215	Welding
10605-19T	08/12/14	Summa Canister	241	min	TVOC for LEED		WA856
10605-19F	08/12/14	Assay 580 Badge	241	min	Formaldehyde for LEED		2 COVERS @
10605-19P	08/12/14	SKC 226-01 226-01	48.2	L	4-PCH for LEED		

^Galson Laboratories will substitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☐ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ please indicate if the lower LOQ is required (only available for certain analytes see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Chain of Custody	Print Name/Signature	Date/Time		Print Name/Signature	Date/Time
Relinquished by:	Rory Peterson	08/12/14 / 2:30	Received by:		
Relinquished by:			Received by:		8/13/14 928

Samples received after 3pm will be considered as next day's business.
*Required fields, failure to complete these fields may result in a delay in your samples being processed.

Page 1 of 1

LAB ORIGINAL

APPENDIX F

EHSI LEED SAMPLING FORM

FIELD DATA SHEET

ehsi
EHS–International, Inc.

LEED SAMPLING FORM

Project Location: The Park Place Bldg
EHSI Project No: 10605-19
Technician Rory Peterson
Date 8/12/2014

Location #: 19th Floor. S. Side. Open Cubicles
Comments

CO :
Start 8:01 Finish 12:03 Q-Trak # EHSI 0231
Log # 1 Test # 004
Comments:

PM10 :
Start 8:01 Finish 12:03 Dust Trak # AM 021
Log # 1
Comments:

TVOC:
Sample ID: 10605-19T
Start 8:00 Finish 12:01 Canister# VA 856 Regulator # WR 411
Initial Pressure (in Hg): -30+ Final Pressure (in Hg): -1
Comments:

4-PCH:
Sample ID: 10605-19P
Start 8:02 Finish 12:03 Pump# EHSI 0709 Rotometer EHSI 2012-01
Initial Flow (LPM): 0.20 Final Flow: 0.20 Ave. Flow: 0.20
Comments:

Formaldehyde: (Passive Badge) LOT # 580AT 9A13 Badge # KE0084
Sample ID: 10605-19F
Start 8:02 Finish 12:03
Comments: Both Covers Removed

APPENDIX G

LETTER FROM MACDONALD-MILLER FACILITY SOLUTION REGARDING CONDITION OF HVAC DURING TESTING

MacDonald-Miller
FACILITY SOLUTIONS®

August 12, 2014

Brian Morant
Hermanson Company LLC
1221 2nd Ave N
Kent, WA 98032

Subject: IAQ Building Ventilation

Dear Brian:

This letter is to confirm that the Park Place building ventilation system has been flushing floor 19 for the past 14 days. It has been returned to normal building occupied mode for IAQ testing on Level 19 as of 6:00 AM this morning.

The system will continue to provide minimum OSA per normal occupied schedule until 6:00 PM.

Regards,

Brian Wheeler

Brian Wheeler
System Specialist
MacDonald-Miller Facility Solutions
206-768-4064